AMENDMENTS TO THE SPECIFICATION:

Please replace the following numbered paragraphs with the following rewritten paragraphs:

[6] The trailing edge servo flap is located outboard of the trailing edge flap in the span wise direction, relative to the root end of the blade. The servo flap may also be ~~off set~~offset from the trailing edge flap in the chord wise direction as measured from the main rotor blade leading edge. The servo flap, if present, is located upon a trailing edge servo flap arm. The servo flap arm is linked to the trailing edge flap and pitches about a trailing edge servo flap arm pitch axis. The chord wise ~~off set~~offset of the servo flap provides a moment arm to transfer a pitching moment from the servo flap to the trailing edge flap. The span wise offset of the servo flap relative to the trailing edge flap provides a significant increase in aerodynamic force available to pitch the main rotor blade. The cause of this force amplification is a result of locating the servo flap out board of the trailing edge flap in the span wise direction. By so doing, the servo flap operates in a higher speed relative flow environment as induced by the rotational motion of the main rotor blade.

[20] Referring to Figure 2a, a rotor blade assembly 20 (only one illustrated) that is part of a ~~rotor head~~main rotor assembly 12 includes an inboard section 22, an intermediate section 24, and an outboard section 26. The inboard, intermediate, and outboard sections 22, 24, 26 define the span of the main rotor blade assembly 20. The blade sections 22, 24, 26 define a blade radius R between the axis of rotation A and a blade tip 28.

[~~11~~21] The blade root ~~portion~~section 22 is attached to the main rotor assembly 12 for rotating the rotor blade assembly 20 about the axis of rotation A. The rotor blade assembly 20 defines a leading edge 20a and a trailing edge 20b, which are generally, although not necessarily, parallel to each other. A blade pitch axis P is located between the leading edge 20a and the trailing edge 20b. The distance between the leading edge 20a and the trailing edge 20b defines a main element chord length c.

[~~12~~22] The rotor blade assembly 20 includes a pitch control assembly 29 to pitch the rotor blade about the rotor blade pitch axis P. As the pitch control assembly 29 controls pitch of the rotor blade assembly 20, swashplate-less rotor systems and active flap rotor systems will benefit from the present invention. Moreover, while the pitch control assembly 29 according to the present invention is described herein in terms of the main rotor blades of a helicopter main rotor assembly, one skilled in the art will appreciate that pitch control

assembly 29 will have utility for use in combination with other rotating aerodynamic structures such as windmills among others.

[~~13~~23] The pitch control assembly 29 includes a trailing edge flap 30 and a trailing edge servo flap 32 that extends aft of the trailing edge 20b. The trailing edge servo flap 32 is preferably located outboard of the trailing edge flap 30 relative to the blade axis of rotation A. The trailing edge flap 30 pitches about a trailing edge flap pitch axis F and the trailing edge servo flap 32 pitches about a trailing edge servo flap pitch axis S.

[~~14~~24] The trailing edge servo flap 32 is preferably mounted upon a trailing edge servo flap arm 34. The trailing edge servo flap arm 34 locates the trailing edge servo flap 32 rearward of the trailing edge 20b in a chord-wise direction. The trailing edge servo flap arm 34 is linked to the trailing edge flap 30 and pitches about a trailing edge servo flap arm pitch axis S_A that is located along the trailing edge flap pitch axis F. That is, axis S_A and axis F are co-joined. Preferably, an inboard trailing edge servo flap arm 34a is rigidly linked either directly or via some mechanical means to an outboard segment 30b of the trailing edge flap 30.

[~~15~~25] Possible alternative arrangements of the trailing edge flap and trailing edge servo flap are shown in Figure 2b and Figure 2c. Only the mid ~~portion~~section 24 and the outboard ~~portion~~section 26 of the blade ~~is~~are shown for clarity. As depicted in these Figures, several combinations of the positioning of the trailing edge flap 30 and the trailing edge servo flap 32 are possible on the blade. Referring to Figure 2b, the trailing edge flap axis F is located aft of the blade pitch axis P at a distance L_{P-F}. The trailing edge servo flap arm pitch axis S_A is located at a distance L_{P-SA} aft of the blade pitch axis P. It should be understood that $L_{P-F} < L_{P-SA}$ or that $L_{P-F} = L_{P-SA}$ or that $L_{P-F} > L_{P-SA}$. The trailing edge servo flap axis S is located a distance L_{SA-S} aft of the trailing edge servo flap arm axis S_A, where S may be located forward, on or aft of S_A. The chord of the trailing edge flap 30 is defined as c_F and the chord of the trailing edge servo flap is defined as c_{SF}. It is possible that $c_F/c < 1$ or $c_F/c = 1$ or $c_F/c > 1$. Alternatively, $c_{SF}/c < 1$ or $c_{SF}/c = 1$ or $c_{SF}/c > 1$. Additionally, $c_{SF}/c_F < 1$ or $c_{SF}/c_F = 1$ or $c_{SF}/c_F > 1$.

[~~16~~26] Referring to Figure 2c, the span of the trailing edge flap 30 is defined as B_F and the span of the trailing edge servo flap 32 is defined as B_{SF} and the length ratios are B_F/R, B_{SF}/R and B_{SF}/B_F. The span wise separation between the trailing edge flap edge 30b and the trailing edge servo flap arm 34a is given by $L_{30b-34a}$. Various combinations of these length ratios are possible.

67,008-078
S-5690

[~~17~~27] Referring to Figure 3a, that depicts the section 3-3 of Figure 2a, the pitch control assembly 29 is illustrated in a first position. The trailing edge flap 30 and the trailing edge servo flap 32 are generally undeflected and in line with the leading edge 20a and the trailing edge 20b. The pressure distribution is illustrated in phantom around the section of the rotor blade assembly 20, the trailing edge flap 30, and the trailing edge servo flap 32. To pitch the rotor blade 20 to a nose up position, the trailing edge flap 30 must be pitched nose down. To pitch the trailing edge flap 30 nose down, the trailing edge servo flap 32 is pitched nose up (Figure 3b). Likewise, to pitch the rotor blade assembly 20 to a nose down position, the trailing edge flap 30 must be pitched nose up. To pitch the trailing edge flap 30 nose up, the trailing edge servo flap 32 is pitched nose down. That is, the trailing edge servo flap 32 is pitched in a direction opposite the desired pitch direction of the trailing edge flap 30, but in the same direction as it is desired to pitch the main rotor blade assembly 20.

[~~18~~28] As the trailing edge servo flap 32 is located radially outboard and aft of the trailing edge flap 30, the trailing edge servo flap 32 provides an increased moment arm and an aerodynamic force multiplication to drive deflection of the trailing edge flap 30. That is, the trailing edge flap 30 is not driven directly by an actuator but driven through deflection of the trailing edge servo flap 32 that is linked to the trailing edge flap 30.

[~~19~~29] Referring to Figure 4, the trailing edge servo flap 32 is driven by an actuator assembly 36 located adjacent to and/or within the trailing edge servo flap arm 34. The actuator preferably incorporates "smart" materials. As generally known, such actuators provide expansion and contraction in response to an external electro-voltaic field. The "smart" material reacts in a dimensionally predictable, repeatable to the electrical changes and can so be tuned to provide oscillatory deflections of the actuator assembly arm 36 and thus of the servo flap. It should be understood that other actuators will benefit from the present invention.

[~~20~~30] As the actuator is preferably activated by an electro-voltaic field, the actuator assembly arm 36 is readily located in areas of limited accessibility and activated by electrical power through electrical connections that are relatively lightweight and uncomplicated and can be used to traverse a rotational frame (as represented schematically in Figure 4). Moreover, by virtue of the relative positioning of the trailing edge servo flap 32 with respect to the trailing edge flap 30, a relatively small force will deflect the servo flap, which deflects the trailing edge flap 30. Such a small force is well within the force generated by an active material or other "smart" material actuators.

[~~21~~31] The actuator assembly arm 36 is flexed (illustrated schematically by arrow M) in response to the actuator to deflect the trailing edge servo flap 32 in response to a controller or the like. It should be understood that other actuator mechanisms and arrangements for the trailing edge servo flap 32 will also benefit from the present invention. Rapid, precise and accurate positioning of the trailing edge servo flap 32 and the trailing edge flap 30 to position the rotor blade 20 to a desired pitch is thereby readily achieved.

[~~22~~32] It should be understood that relative positional terms such as "forward," "aft," "upper," "lower," "above," "below," and the like are with reference to the normal operational attitude of the vehicle and should not be considered otherwise limiting. Although particular step sequences are shown, described, and claimed, it should be understood that steps may be performed in any order, separated or combined unless otherwise indicated and will still benefit from the present invention.

[~~23~~33] The foregoing description is exemplary rather than defined by the limitations within. Many modifications and variations of the present invention are possible in light of the above teachings. The preferred embodiments of this invention have been disclosed, however, one of ordinary skill in the art would recognize that certain modifications would come within the scope of this invention. It is, therefore, to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described. For that reason the following claims should be studied to determine the true scope and content of this invention.